

What is claimed is:

1. An illuminated switch construction comprising: -  
a substrate having at least one guide hole formed  
5 therein;  
a switch unit provided on said substrate, said  
switch unit having a driven part driven for reciprocating  
motion;  
a light-emitting device provided on said substrate  
10 at a location adjacent to said switch unit; and  
a pushbutton unit that drives said switch unit, said  
pushbutton unit having an opposed part disposed in  
opposed relation to said light-emitting device, a  
depressing part disposed in association with said opposed  
15 part, for depressing operation, said depressing part  
allowing light from said light-emitting device to pass  
therethrough, a coupling part coupled to said driven part  
of said switch unit to interlock said driven part and  
said pushbutton unit for reciprocating motion, and at  
20 least one guide pin fitted through a corresponding one of  
said at least one guide hole of said substrate to  
cooperate with said corresponding guide hole to perform a  
guiding function of guiding the reciprocating motion of  
said pushbutton unit.
- 25 2. An illuminated switch construction as claimed  
in claim 1, wherein:  
said switch unit has a vertical surface  
substantially perpendicular to said substrate; and  
said pushbutton unit has a sliding contact part that  
30 is disposed for sliding contact with said vertical  
surface of said switch unit in accordance with the  
reciprocating motion of said pushbutton unit; and  
said vertical surface of said switch unit and said  
sliding contact part of said pushbutton unit cooperate  
35 with each other to perform the guiding function together

with the guide hole and the guide pin, for guiding the reciprocating motion of said pushbutton unit.

3. A pushbutton unit for an illuminated switch fixed on a substrate having at least one guide hole 5 formed therein, said pushbutton unit being operated for driving a switch unit having a driven part that is driven for reciprocating motion, comprising:

an opposed part disposed in opposed relation to a light-emitting device provided on the substrate at a 10 location adjacent to the switch unit;

a depressing part disposed in association with said opposed part, for depressing operation, said depressing part allowing light from the light-emitting device to pass therethrough;

15 a coupling part coupled to the driven part of the switch unit to interlock the driven part and the pushbutton unit for reciprocating motion; and

20 at least one guide pin fitted through a corresponding one of the at least one guide hole of the substrate to cooperate with the corresponding guide hole to perform a guiding function of guiding the reciprocating motion of the pushbutton unit.

4. A pushbutton unit for an illuminated switch as claimed in claim 3, further comprising a sliding contact 25 part disposed for sliding in contact with a vertical surface of the switch unit in accordance with the reciprocating motion of the pushbutton unit, and wherein said sliding contact part cooperates with the vertical surface to perform the guiding function together with the 30 guide hole and the guide pin, for guiding the reciprocating motion of the pushbutton unit.

5. An illuminated switch construction comprising:  
a substrate having at least one guide part;  
a switch unit provided on said substrate, said 35 switch unit having a driven part that is driven for

reciprocating motion;

a light-emitting device provided on said substrate at a location adjacent to said switch unit; and

5 a pushbutton unit that drives said switch unit, said pushbutton unit having an opposed part disposed in opposed relation to said light-emitting device, a depressing part disposed in association with said opposed part, for depressing operation, said depressing part allowing light from said light-emitting device to pass therethrough, a coupling part coupled to said driven part of said switch unit to interlock said driven part and said pushbutton unit for reciprocating motion, and at least one guide-engaging part engaged with a corresponding one of said at least one guide part of said substrate to cooperate with said corresponding guide part 10 to perform a guiding function of guiding the reciprocating motion of said pushbutton unit.

6. An illuminated switch construction, as claimed in claim 5, further comprising at least one guide pin 20 provided on said guide-engaging part, and

wherein said guide part has at least one through hole formed therein and extending in a longitudinal direction of said at least one guide pin of said guide-engaging part, said guide pin being fitted through said 25 at least one through hole, said guide part being formed as a separate member from said substrate and fixed to said substrate.

7. An illuminated switch construction comprising: a substrate having at least one guide part; 30 a switch unit provided on said substrate, said switch unit having a driven part that is driven for reciprocating motion;

a light-emitting device provided on said substrate at a location adjacent to said switch unit; and

35 a pushbutton unit that drives said switch unit, said

pushbutton unit having a pushbutton unit main body and a push-down member with indicator; and

5        said pushbutton unit main body being formed as a one-piece member incorporating an opposed part disposed in opposed relation to said light-emitting device, a coupling part coupled to said driven part of said switch unit to interlock said driven part and said pushbutton unit for reciprocating motion, and at least one guide-engaging part engaged with a corresponding one of said at 10 least one guide part of said substrate to cooperate with said corresponding guide part to perform a guiding function of guiding the reciprocating motion of said pushbutton unit,

15        said push-down member with indicator being disposed on a side of said pushbutton unit main body remote from said substrate and in association with said opposed part of said pushbutton unit main body, said push-down member with indicator having a depressing part for depressing operation, said depressing part allowing light from said 20 light-emitting device to pass therethrough.

8. An illuminated switch construction as claimed in claim 7, wherein said push-down member with indicator includes at least one light diffuser sheet.

9. An illuminated switch construction as claimed 25 in claim 8, wherein said push-down member with indicator is formed by said light diffuser sheet and said depressing part stacked upon said light diffuser sheet on the side of the pushbutton unit main body remote from said substrate.

30        10. An illuminated switch construction as claimed in claim 9, wherein said depressing part composed of a solid transparent body.

11. An illuminated switch construction as claimed 35 in claim 9, further comprising at least one positioning engaging part provided on said pushbutton unit main body,

for aligning said light diffuser sheet and said depressing part stacked upon said light diffuser sheet.

12. An illuminated switch construction comprising:

a substrate having at least one guide part;

5 a switch unit provided on said substrate, said switch unit having a driven part that is driven for reciprocating motion;

a light-emitting device provided on said substrate at a location adjacent to said switch unit; and

10 a pushbutton unit that drives said switch unit, said pushbutton unit being formed by a combination of a pushbutton unit main body and a push-down member with indicator;

15 said pushbutton unit main body being formed as a one-piece member incorporating an opposed part disposed in opposed relation to said light-emitting device, a coupling part coupled to said driven part of said switch unit to interlock said driven part and said pushbutton unit for reciprocating motion, at least one guide-  
20 engaging part engaged with a corresponding one of said at least one guide part of said substrate to cooperate with said corresponding guide part to perform a guiding function of guiding the reciprocating motion of said pushbutton unit, and a push-down member-mounting part on  
25 which one of a plurality of types of push-down member with indicator can be selectively mounted on a side of said pushbutton unit main body remote from said substrate,

30 said push-down member with indicator being disposed on the side of said pushbutton unit main body remote from said substrate and in association with said opposed part of said pushbutton unit main body, said push-down member with indicator having a depressing part for depressing operation, said depressing part allowing light from said light-emitting device to pass therethrough,

35 wherein a desired one of the plurality of types of

push-down member with indicator is mounted on said push-down member-mounting part of said pushbutton unit main body, thereby forming one of different types of illuminated switch assemblies.

5       13. An illuminated switch construction as claimed in claim 12, wherein the push-down member with indicator further comprises at least one of a plurality of types of light diffuser sheets, whereby a plurality of types of the push-down member with indicator can be obtained by  
10      selectively combining at least one of the plurality of types of light diffuser sheets with said depressing part; and

      wherein the selected at least one light diffuser sheet and said depressing part are mounted on said push-down member-mounting part of said pushbutton unit main body in a manner such that the selected at least one light diffuser sheet is stacked upon said depressing part, whereby a desired type of illuminated switch assembly can be obtained.

20      14. An illuminated switch construction as claimed in claim 12, wherein said push-down member with indicator further comprises at least one light diffuser sheet, whereby a plurality of types of the push-down member with indicator can be obtained by selectively combining one of  
25      a plurality of types of depressing parts with said at least one light diffuser sheet; and

      wherein said at least one light diffuser sheet and the selected depressing part are mounted on said push-down member-mounting part of said pushbutton unit main body in a manner such that the at least one light diffuser sheet is stacked upon the selected depressing part, whereby a desired type of illuminated switch assembly can be obtained.

30      15. An illuminated switch construction as claimed in claim 12, wherein the push-down member with indicator

further comprises at least one of a plurality of types of light diffuser sheets, whereby a plurality of types of the push-down member with indicator can be obtained by selectively combining one of a plurality of types of 5 depressing parts and at least one of the plurality of types of light diffuser sheets; and

wherein said at least one light diffuser sheet and the selected depressing part are mounted on said push-down member-mounting part of said pushbutton unit main 10 body in a manner such that the selected at least one light diffuser sheet is stacked upon the selected depressing part, whereby a desired type of illuminated switch assembly can be obtained.

16. An illuminated switch construction as claimed 15 in claim 12, wherein said pushbutton unit main body comprises side walls, and said opposed part comprises a cavity surrounded by said side walls.

17. An illuminated switch construction as claimed in claim 16, wherein said cavity expands toward said 20 push-down member with indicator.

18. An illuminated switch construction as claimed in claim 16, wherein said depressing part and said cavity are disposed such that when during reciprocating motion of said pushbutton unit responsive to depression of said 25 depressing part, at least a portion of said light-emitting device is inserted into said cavity, and as said depressing part is depressed deeper, said light-emitting device is inserted into said cavity to a greater degree.

19. An illuminated switch construction comprising: 30 a substrate having a plurality of electric components arranged thereon; at least one guide part fixed on said substrate; a switch unit provided on said substrate, said switch unit having a driven part that is driven for 35 reciprocating motion;

a light-emitting device provided on said substrate at a location adjacent to said switch unit; and

      a pushbutton unit that drives said switch unit, said pushbutton unit having a light transmissive part allowing

5      light from said light-emitting device to pass therethrough, a depressing part for depressing operation, a coupling part coupled to said driven part of said switch unit to interlock said driven part and said pushbutton unit for reciprocating motion, at least one

10      guide-engaging part engaged with a corresponding one of said at least one guide part of said substrate to cooperate with said corresponding guide part to perform a guiding function of guiding the reciprocating motion of said pushbutton unit,

15      wherein reciprocating motion of said driven part is guided by the guiding function performed by said guide part and said guide-engaging part.

      20. A switch construction comprising:

      a substrate having at least one guide part;

20      a switch unit provided on said substrate, said switch unit having a driven part that is driven for reciprocating motion; and

      a pushbutton unit that drives said switch unit, said pushbutton unit having a depressing part for depressing

25      operation, a coupling part coupled to said driven part of said switch unit to interlock said driven part and said pushbutton unit for reciprocating motion, and at least one guide-engaging part engaged with a corresponding one of said at least one guide part of said substrate to

30      cooperate with said corresponding guide part to perform a guiding function of guiding the reciprocating motion of said pushbutton unit;

      said substrate comprising a general-purpose substrate used as a base member for a plurality of

35      electric component parts other than said switch unit,

said general-purpose substrate being capable of having said electric component parts and said pushbutton unit arranged thereon;

5 wherein reciprocating motion of said driven part is guided by the guiding function performed by said guide part and said guide-engaging part.

21. An illuminated switch construction comprising:  
a substrate having at least one guide pin fixed thereon;

10 a switch unit provided on said substrate, said switch unit having a driven part driven for reciprocating motion;

a light-emitting device provided on said substrate at a location adjacent to said switch unit; and

15 a pushbutton unit that drives said switch unit, said pushbutton unit having an opposed part disposed in opposed relation to said light-emitting device, a depressing part disposed in association with said opposed part, for depressing operation, said depressing part 20 allowing light from said light-emitting device to pass therethrough, a coupling part coupled to said driven part of said switch unit to interlock said driven part and said pushbutton unit for reciprocating motion, and at least one guide hole having a corresponding one of said 25 at least one guide pin fitted therethrough, for cooperating with said corresponding guide hole to perform a guiding function of guiding the reciprocating motion of said pushbutton unit.